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AVAGO TECHNOLOGIES | STORAGE BY LSI

Storage Solutions
Product Guide

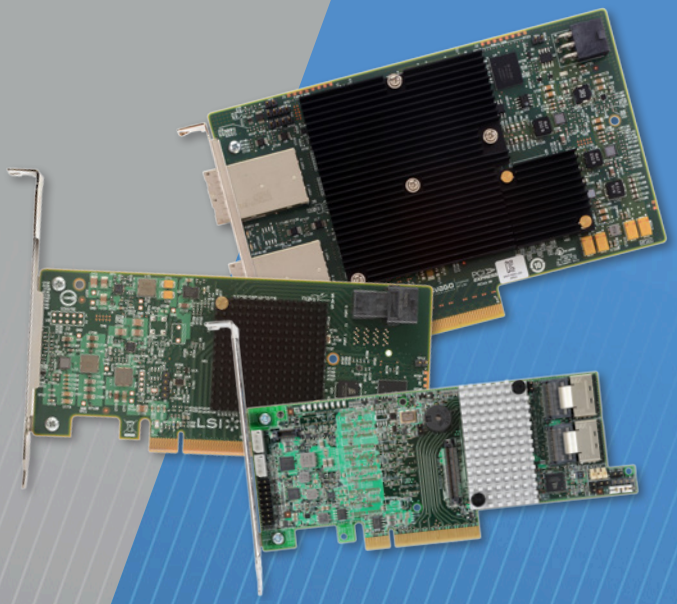


Table of Contents

4 HBAs

5 MegaRAID Entry (iMR)

6 MegaRAID and 3ware RAID

8 SafeStore

9 Cache Protection Options

10 Syncro

11 CacheCade Pro 2.0

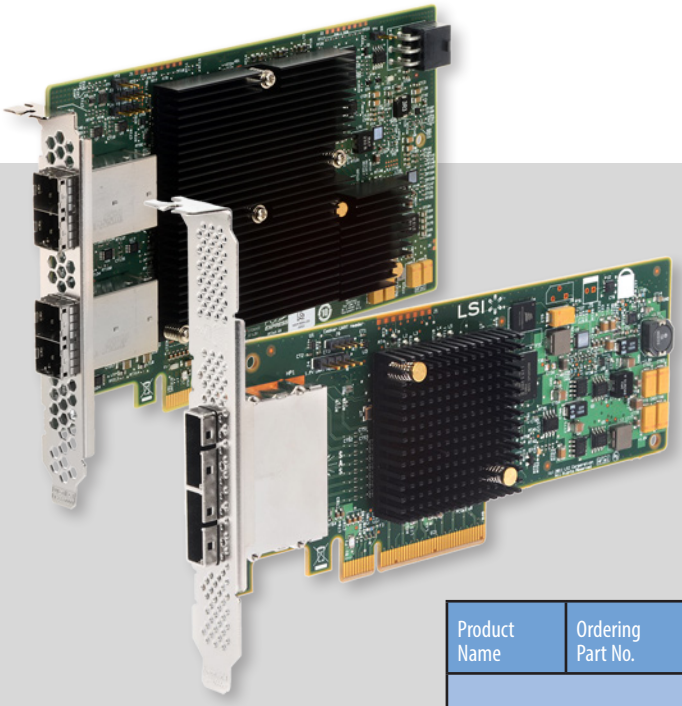
12 Cables and Connectors

The amount and variety of data produced by content-rich Internet, cloud and enterprise applications poses unprecedented challenges for data centers of all sizes.

New approaches and technologies are needed to manage this deluge of data: to store it, protect it, and maximize the value from it. These challenges present opportunities to help the world make the most from its data.

Avago Technologies is focused on helping customers in wireless communications, wired infrastructure, enterprise storage and industrial and other markets solve their challenges. Avago has the industry's broadest portfolio of storage solutions, backed by decades of experience and trusted by the world's leading server and storage suppliers. Avago provides the building blocks for storage solutions that help customers understand, prioritize, store and protect critical data.

Whether you need to protect data, power your storage solutions, or deliver the performance needed by critical applications, Avago's 12Gb/s SAS MegaRAID® controller cards and Host Bus Adapters (HBAs), Advanced Software Options, and Syncro® shared DAS solutions are the smart choice.



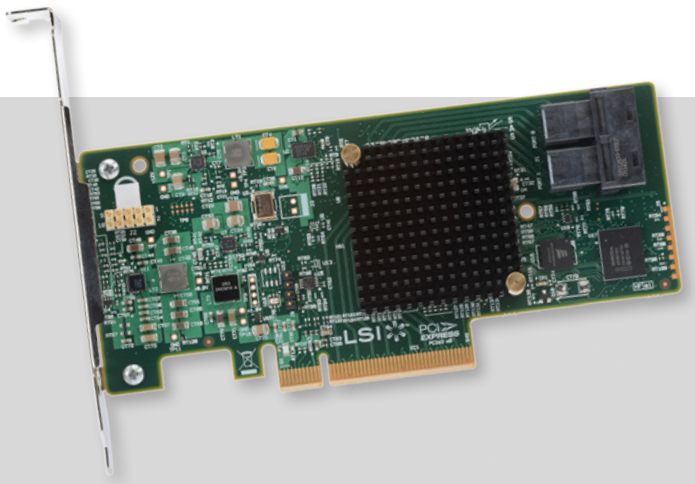
HBAs

Equip storage solutions with the connectivity needed to meet any scaling needs from the smallest SMBs to the largest data centers. Avago HBAs can enable an easy, long-term storage growth strategy in practically any direct-attached storage scenario. Whether solutions use SAS or SATA, hard disk or flash, or even internal or external storage elements, our HBAs are designed to create the fabric tying any or all of those components together into a unified storage effort.

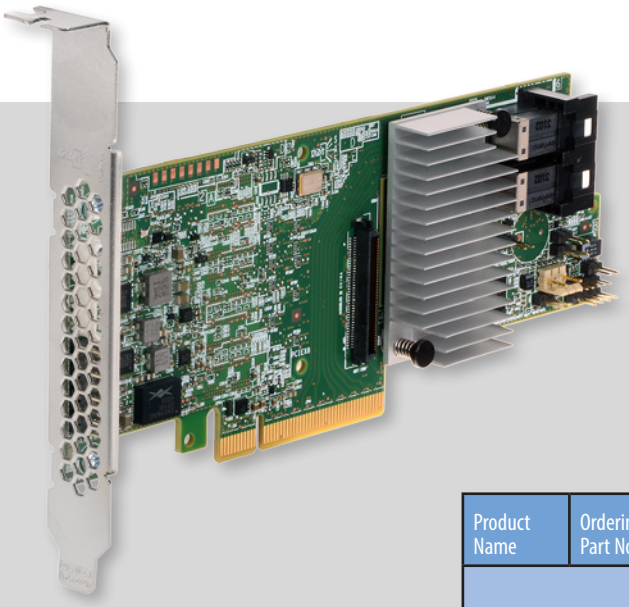
Product Name	Ordering Part No.	Form Factor	Ports	Connectors	Bus Interface	No. of Devices Supported	RAID Levels
12Gb/s SAS							
9300-16e	LSI00342 (SGL)	Full-Height	16	4 x SFF-8644	PCIe 3.0 x8	2048	JBOD
9300-8e	LSI00343 (SGL)	LP MD2	8	2 x SFF-8644	PCIe 3.0 x8	1024	JBOD
9300-16i	LSI00447 (SGL)	Full-Height	16	4 x SFF-8643	PCIe 3.0 x8	1024	JBOD
9300-8i	LSI00345 (KIT) LSI00344 (SGL)	LP MD2	8	2 x SFF-8643	PCIe 3.0 x8	1024	JBOD
9300-4i4e	LSI00349 (KIT) LSI00348 (SGL)	LP MD2	8	1 x SFF-8643 1 x SFF-8644	PCIe 3.0 x8	1024	JBOD
9300-4i	LSI00347 (KIT) LSI00346 (SGL)	LP MD2	4	1 x SFF-8643	PCIe 3.0 x8	1024	JBOD
6Gb/s SAS							
9207-8e	LSI00300 (SGL)	LP MD2	8	2 x SFF-8088	PCIe 3.0 x8	1024	JBOD
9207-8i	LSI00302 (KIT) LSI00301 (SGL)	LP MD2	8	2 x SFF-8087	PCIe 3.0 x8	256	JBOD
9207-4i4e	LSI00304 (KIT) LSI00303 (SGL)	LP	8	1 x SFF-8087 1 x SFF-8088	PCIe 3.0 x8	256	JBOD
9206-16e	LSI00299 (SGL)	LP MD2	16	4 x SFF-8644	PCIe 3.0 x8	1024	JBOD
9201-16e	LSI00276 (SGL)	Full Height	16	4 x SFF-8088	PCIe 2.0 x8	1024	JBOD
9200-8e	LSI00188 (SGL)	LP MD2	8	2 x SFF-8088	PCIe 2.0 x8	512	JBOD
9212-4i4e	LSI00193 (KIT) LSI00192 (SGL)	LP	8	4 x SATA x 1 1 x SFF-8088	PCIe 2.0 x8	256	0, 1, 1E, 10, JBOD
9201-16i	LSI00244 (SGL)	Full Height	16	4 x SFF-8087	PCIe 2.0 x8	512	JBOD
9211-8i	LSI00195 (KIT) LSI00194 (SGL)	LP MD2	8	2 x SFF-8087	PCIe 2.0 x8	256	0, 1, 1E, 10, JBOD
9211-4i	LSI00191 (KIT) LSI00190 (SGL)	LP MD2	4	1 x SFF-8087	PCIe 2.0 x8	256	0, 1, 1E, 10, JBOD

MegaRAID Entry (iMR)

MegaRAID SAS entry controller cards provide trusted MegaRAID data protection and reliability for non-business critical applications. Offering the same management features and OS support as the mainstream MegaRAID lineup at an affordable price point, the entry controllers are great solutions for small and medium businesses (SMB) deploying entry-level server platforms and workstations.



Product Name	Ordering Part No.	Form Factor	Ports	Connectors	Bus Interface	Processor	Cache Memory	Cache Protection
12Gb/s SAS								
9341-4i	LSI00406 (KIT) LSI00419 (SGL)	LP MD2	4	1 x SFF-8643	PCIe 3.0 x8	LSI SAS3008		
9341-8i	LSI00408 (KIT) LSI00407 (SGL)	LP MD2	8	2 x SFF-8643	PCIe 3.0 x8	LSI SAS3008		
6Gb/s SAS								
9240-4i	LSI00203 (KIT) LSI00199 (SGL)	LP MD2	4	1 x SFF-8087	PCIe 2.0 x8	LSI SAS2008		
9240-8i	LSI00204 (KIT) LSI00200 (SGL)	LP MD2	8	2 x SFF-8087	PCIe 2.0 x8	LSI SAS2008		



MegaRAID and 3ware RAID

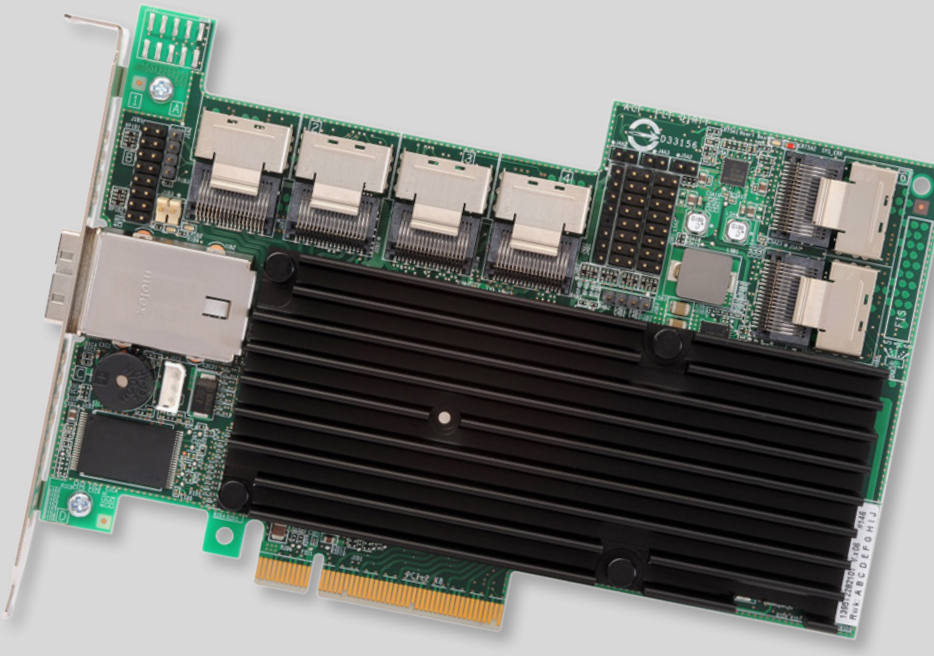
Ensure critical data is protected and available with the most widely deployed RAID data protection architecture. Our broad range of MegaRAID and 3ware RAID controller cards are designed to address virtually all direct-attached storage environments where data protection, performance and expandability are crucial requirements – SATA or SAS, hard disk drives (HDDs) or solid state drives (SSDs), server-based storage or external direct-attached JBODs and storage enclosures.

Product Name	Ordering Part No.	Form Factor	Ports	Connectors	Bus Interface	Processor	Cache Memory	Cache Protection
12Gb/s SAS								
9361-4i	LSI00414 (KIT) LSI00415 (SGL)	LP MD2	4	1 x SFF-8643	PCIe 3.0 x8	LSI SAS3108	1GB	LSICVM02 (optional)
9361-8i	LSI00416 (KIT) LSI00417 (SGL)	LP MD2	8	2 x SFF-8643	PCIe 3.0 x8	LSI SAS3108	1GB	LSICVM02 (optional)
9380-4i4e	LSI00439 (SGL)	LP MD2	8	1 x SFF-8643 1 x SFF-8644	PCIe 3.0 x8	LSI SAS3108	1GB	LSICVM02 (optional)
9380-8e	LSI00438 (SGL)	LP MD2	8	2 x SFF-8644	PCIe 3.0 x8	LSI SAS3108	1GB	LSICVM02 (optional)
6Gb/s SAS								
9271-4i	LSI00329 (KIT) LSI00328 (SGL)	LP MD2	4	1 x SFF-8087	PCIe 3.0 x8	LSI SAS2208	1GB	LSIiBBU09 LSICVM01
9271-8i	LSI00331(KIT) LSI00330 (SGL)	LP MD2	8	2 x SFF-8087	PCIe 3.0 x8	LSI SAS2208	1GB	LSIiBBU09 LSICVM01
9270-8i	LSI00327 (KIT) LSI00326 (SGL)	LP MD2	8	2 x SFF-8087	PCIe 3.0 x8	LSI SAS2208	1GB	LSIiBBU09
9286-8e	LSI00332 (SGL)	LP MD2	8	2 x SFF-8088	PCIe 3.0 x8	LSI SAS2208	1GB	LSIiBBU09
9286CV-8e	LSI00333 (SGL)	LP MD2	8	2 x SFF-8088	PCIe 3.0 x8	LSI SAS2208	1GB	CacheVault™ Included
9266-4i	LSI00306 (KIT) LSI00305 (SGL)	LP MD2	4	1 x SFF-8087	PCIe 2.0 x8	LSI SAS2208	1GB	LSIiBBU09 LSICVM01
9266-8i	LSI00296 (KIT) LSI00295 (SGL)	LP MD2	8	2 x SFF-8087	PCIe 2.0 x8	LSI SAS2208	1GB	LSIiBBU09 LSICVM01
9285CV-8e	LSI00298 (SGL)	LP MD2	8	2 x SFF-8088	PCIe 2.0 x8	LSI SAS2208	1GB	CacheVault™ Included
9260-4i	LSI00201 (KIT) LSI00197 (SGL)	LP MD2	4	1 x SFF-8087	PCIe 2.0 x8	LSI SAS2108	512MB	LSIiBBU07 LSIiBBU08
9260-8i	LSI00202 (KIT) LSI00198 (SGL)	LP MD2	8	2 x SFF-8087	PCIe 2.0 x8	LSI SAS2108	512MB	LSIiBBU07 LSIiBBU08
9261-8i	LSI00212 (SGL))	LP MD2	8	2 x SFF-8087	PCIe 2.0 x8	LSI SAS2108	512MB	LSIiBBU07 LSIiBBU08
9260-16i	LSI00208 (SGL)	Full Height	16	4 x SFF-8087	PCIe 2.0 x8	LSI SAS2108	512MB	LSIiBBU07 LSIiBBU08

9280-8e	LSI00205 (SGL)	LP MD2	8	2 x SFF-8088	PCIe 2.0 x8	LSI SAS2108	512MB	LSIiBBU07 LSIiBBU08
9280-16i4e	LSI00210 (SGL)	Full Height	20	1 x SFF-8088 4 x SFF-8087	PCIe 2.0 x8	LSI SAS2108	512MB	LSIiBBU07 LSIiBBU08
9280-24i4e	LSI00211 (SGL)	Full Height	28	1 x SFF-8088 6 x SFF-8087	PCIe 2.0 x8	LSI SAS2108	512MB	LSIiBBU07 LSIiBBU08

3ware

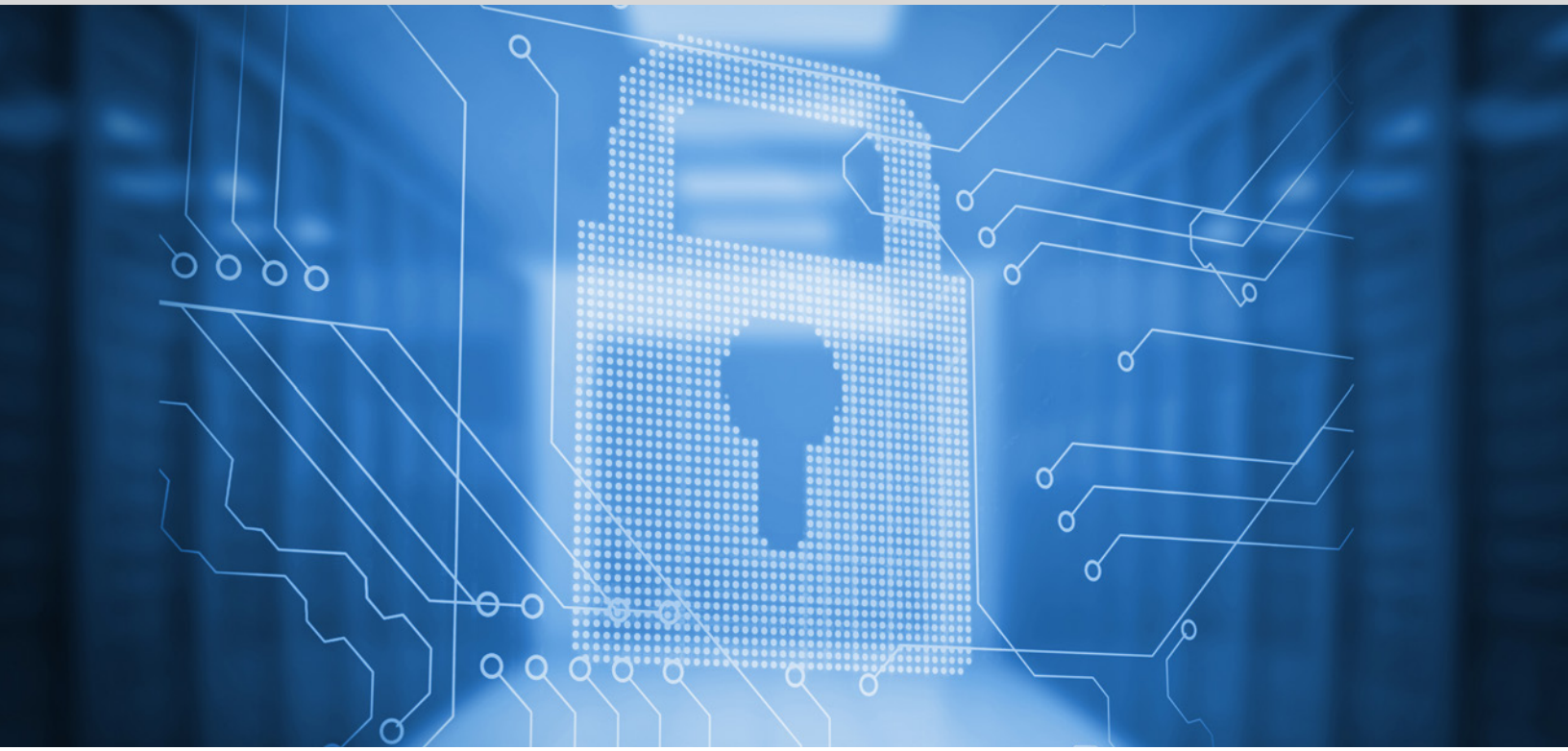
Product Name	Ordering Part No.	Form Factor	Ports	Connectors	Bus Interface	Processor	Cache Memory	Cache Protection
9750-24i4e	LSI00253 (KIT) LSI00251 (SGL)	Full Height	28	1 x SFF-8088 6 x SFF-8087	PCIe 2.0 x8	LSI SAS2108	512MB	LSIiBBU07
9750-16i4e	LSI00254 (KIT) LSI00252 (SGL)	Full Height	20	1 x SFF-8088 4 x SFF-8087	PCIe 2.0 x8	LSI SAS2108	512MB	LSIiBBU07
9750-8e	LSI00250 (KIT) LSI00243 (SGL)	LP MD2	8	2 x SFF-8088	PCIe 2.0 x8	LSI SAS2108	512MB	LSIiBBU07
9750-4i4e	LSI00241 (KIT) LSI00242 (SGL)	LP MD2	8	1 x SFF-8088 1 x SFF-8087	PCIe 2.0 x8	LSI SAS2108	512MB	LSIiBBU07
9750-8i	LSI00213 (KIT) LSI00214 (SGL)	LP MD2	8	2 x SFF-8087	PCIe 2.0 x8	LSI SAS2108	512MB	LSIiBBU07
9750-4i	LSI00215 (KIT) LSI00216 (SGL)	LP MD2	4	1 x SFF-8087	PCIe 2.0 x8	LSI SAS2108	512MB	LSIiBBU07



SafeStore

Whether it is sensitive customer information, intellectual property or proprietary data that helps a company reach its strategic objectives, a company's data may be its most valuable asset. If this data is misplaced or stolen, organizations run the risk of lost revenue, legal implications and a tarnished reputation. With SafeStore software, businesses can be assured that the highest level of security is placed on their data, while preserving system performance and ease-of-use. Together with self-encrypting drives (SEDs), SafeStore software secures a drive's data from unauthorized access or modification resulting from theft, loss or repurposing of drives.

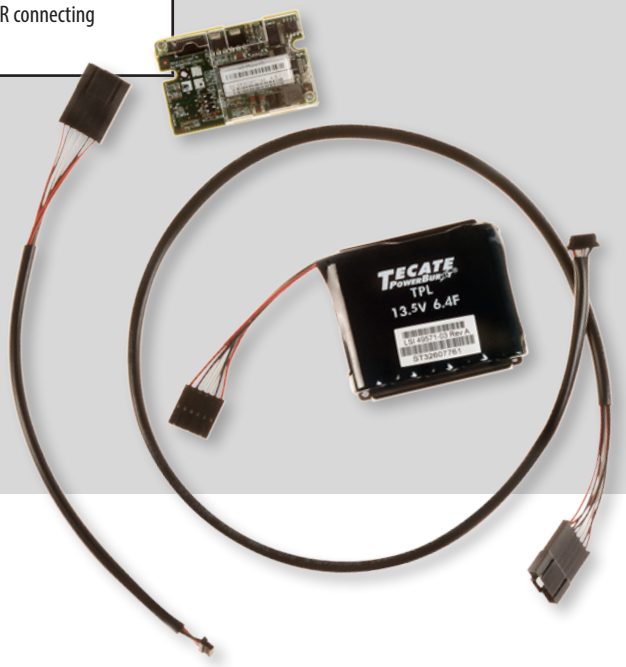
SafeStore™ Software	LSI00268 (SW License)	MR SAS 9260/9261/9265/9266/9270/9271/9280/9285/9286/9361/9380 series controllers
	LSI00245 (HW Key)	9260 (-4i, -8i, -16i, CV-4i, CV-8i), 9280 (-8e, -4i4e, -16i4e, -24i4e)
	LSI00287 (HW Key)	9265-8i, 9266 (-4i, -8i), 9270-8i, 9271 (-4i, -8i, -8iCC), 9285 (-8e, CV-8e), 9286 (-8e, CV-8e, CV-8eCC), 9361 (-4i, -8i), 9380 (-4i4e, -8e)

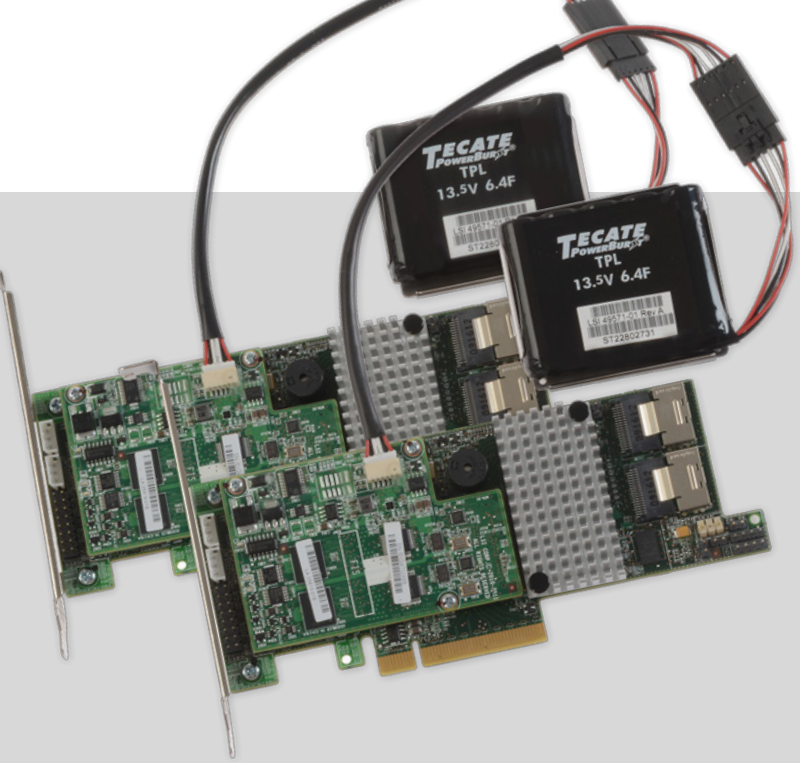


Cache Protection Options

RAID caching is a cost-effective way to improve I/O performance by writing data to a controllers' cache before it is written to disk. In write-back mode, data written to cache is vulnerable until it is made permanent on disk. To help avoid the possibility of data loss or corruption during a power or server failure, Avago offers the CacheVault flash cache protection module or the battery backup units for MegaRAID SAS controllers cards.

Cache Protection Option	Ordering Part No.	Compatible Controller Cards
LSICVM02	LSI00418	9361 and 9380 Series
LSICVM01	LSI00297	9266 and 9271 Series
LSIiBBU09	LSI00279	9265, 9266, 9270, 9271, 9285, and 9286 Series
LSIiBBU08	LSI00264	9260, 9261 and 9280 Series
LSIiBBU07	LSI00161	8880EM2, 9260, 9261, 9280 and 9750 Series
LSIiBBU06	LSI00160	8704EM2, 8708EM2
LSIiBBU05	LSI00183	8704ELP, 8708ELP, 8888ELP
BBU-BRACKET-05	LSI00291	Remote Mounting Bracket for LSI BBUs and CacheVault Power Modules
Remote Cable/Interposer Kit	LSI00260	Needed ONLY if require remote cable for LSIiBBU06/07 OR connecting LSIiBBU07/08 remotely to 9260-4i or 9260-8i





Syncro

As data volumes continue to grow, the need for a sharable, scalable storage solution that increases efficiency and uptime, while lowering costs and power usage, is now more important than ever.

Avago's Syncro CS solutions provide small to medium businesses (SMBs) needing a High Availability (HA) solution for their mission-critical applications, with an easier to deploy shared direct attached storage (DAS) solution. Syncro CS solutions are built on MegaRAID technology, designed to deliver uptime at the right price point.

Product Name	Ordering Part No.	Form Factor	Ports	Connectors	Bus Interface	No. of Devices Supported	Cache Memory	Cache Protection
Syncro CS 9271-8i	LSI00392 (KIT)	LP MD2	8	2 x SFF-8087	PCIe 3.0 x8	96	1GB	CacheVault Included
Syncro CS 9286-8e	LSI00356 (KIT)	LP MD2	8	2 x SFF-8088	PCIe 3.0 x8	96	1GB	CacheVault Included

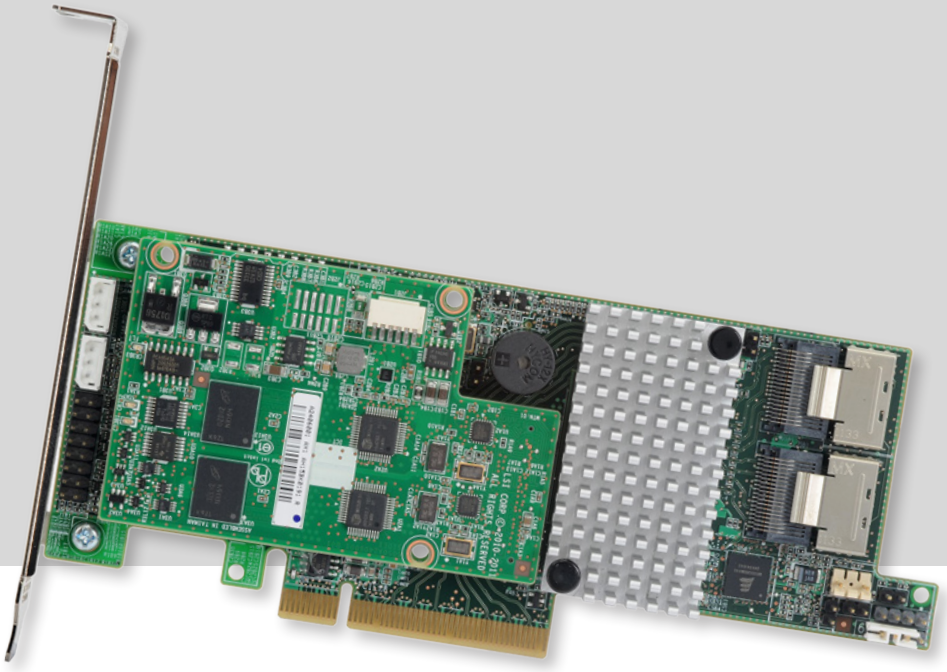
CacheCade Pro 2.0

CacheCade Pro 2.0 software provides a combination of caching intelligence and trusted MegaRAID data protection to accelerate applications in direct-attached storage environments. When IT pushes hard disk drives (HDD) arrays to reach their I/O potential, data "hot spots" become inevitable. Utilizing a small solid state drive (SSD) investment as a front-side flash cache for the much larger disk array, CacheCade Pro 2.0 software dynamically keeps the "hottest" data in flash memory. This can dramatically improve read/write speeds and drop latency.

CacheCade® Pro 2.0 Software Pack	LSI00293 (SW License)	MR SAS 9260/9261/9265/9266/9270/9271/9280/9285/9286/9361/9380 series controllers
	LSI00292 (HW Key)	9260 (-4i, -8i, -16i, CV-4i, CV-8i), 9280 (-8e, -4i4e, -16i4e, -24i4e)
	LSI00290 (HW Key)	9265-8i, 9266 (-4i, -8i), 9270-8i, 9271 (-4i, -8i, -8iCC), 9285 (-8e, CV-8e), 9286 (-8e, CV-8e, CV-8eCC), 9361 (-4i, -8i), 9380 (-4i4e, -8e)

CacheCade Software-Enabled MegaRAID Boards

Product Name	Ordering Part No.	Form Factor	Ports	Connectors	Bus Interface	Processor	Cache Memory	Cache Protection
9271-8iCC	LSI00334 (KIT)	LP MD2	8	2 x SFF-8087	PCIe 3.0 x8	LSI SAS2208	1GB	LSIiBBU09 LSICVM01
9286CV-8eCC	LSI00335 (SGL)	LP MD2	8	2 x SFF-8088	PCIe 3.0 x8	LSI SAS2208	1GB	CacheVault™ Included



Cables

Cable Part Numbers	Length	To Controller	To Drives/ Backplane	Compatible Controllers
CBL-RA8087SATASB-10M	1.0m	SFF-8087	Discrete	9750 (-16i4e, -24i4e), 9280 (-16i4e,-24i4e)
CBL-RA8087SB-10M	1.0m	SFF-8087	SFF-8087	
CBL-SFF8087-SATASB-06M	0.6m	SFF-8087	Discrete	9750 (-4i, 8i, -8e, -4i4e, -16i4e, -24i4e)
CBL-SFF8087-SATASB-10M	1.0m	SFF-8087	Discrete	
CBL-SFF8087SB-08M	0.8m	SFF-8087	SFF-8087	9750 (-4i, -8i, -4i4e, -24i4e), 9240 (-4i, -8i), 9260 (-4i, -8i, -16i), 9261-8i, 9280 (-4i4e, -24i4e), 9201-16i, 9211 (-4,-8i), 9212-4i4e
CBL-SFF8087SB-05M	0.5m	SFF-8087	SFF-8087	
CBL-SFF8087SB-06M	0.6m	SFF-8087	SFF-8087	
CBL-SFF8088SAS-10M	1.0m	SFF-8088	SFF-8088	9750 (-8e, -4i4e, -16i4e, -24i4e), 9280 (-8e, -4i4e, -16i4e, -24i4e), 9200 (-8e, -16e), 9201-16e, 9212-4i4e
CBL-SFF8088SAS-20M	2.0m	SFF-8088	SFF-8088	
CBL-SAS8087OCF-06M	0.6m	SFF-8087	SFF-8482	9750 (-4i, -8i, -4i4e, -24i4e), 9240 (-4i, -8i), 9260 (-4i, -8i, -16i), 9261-8i, 9280 (-4i4e, -24i4e), 9201-16i, 9211 (-4 -8i), 9212-4i4e
CBL-SFF8087-05M	0.5m	SFF-8087	SFF-8087	
CBL-SFF8087-06M	0.6m	SFF-8087	SFF-8087	
CBL-SFF8087OCF-05M	0.5m	SFF-8087	Discrete	
CBL-SFF8087OCF-06M	0.6m	SFF-8087	Discrete	
CBL-SFF8087OCF-10M	1.0m	SFF-8087	Discrete	
CBL-SFF8088ASAS-100M	10m	SFF-8088	SFF-8088	9201-16e, 9207-8e, SAS6160 SAS Switch
CBL-SFF8088ASAS-200M	20m	SFF-8088	SFF-8088	
CBL-RA8087-08M	0.8m	SFF-8087	SFF-8087	9750 (-16i4e, -24i4e)
CBL-RA8087-10M	1.0m	SFF-8087	SFF-8087	
CBL-SFF8087-10M	1.0m	SFF-8087	SFF-8087	9690SA (-4i, -8i, -4i4e), 9750 (-4i, -8i, -4i4e-, 24i4e)
CBL-SFF8644-8088-10M	1.0m	SFF-8088	SFF-8088	9380-8e, 9206-16e, 9300-8e, 9300-4i4e, 9380-4i4e
CBL-SFF8644-8088-20M	2.0m	SFF-8088	SFF-8088	
CBL-SFF8644-8088-60M	6.0m	SFF-8088	SFF-8088	
CBL-SFF8644-10M	1.0m	SFF-8644	SFF-8644	
CBL-SFF8644-20M	2.0m	SFF-8644	SFF-8644	
CBL-SFF8644-60M	6.0m	SFF-8644	SFF-8644	9380-8e, 9380-4i4e, 9380-4i4e, 9206-16e, 9300-8e, 9300-4i4e, 9380-4i4e
CBL-SFF8643-8087-06M	0.6m	SFF-8644	SFF-8087	9300-4i, 9300-8i, 9300-4i4e, 9361-4i, 9361-8i, 9341-4i, 9341-8i, 9380-4i4e
CBL-SFF8643-8087-08M	0.8m	SFF-8644	SFF-8087	
CBL-SFF8643-8087-10M	1.0m	SFF-8643	SFF-8087	
CBL-SFF8643-06M	0.6m	SFF-8643	SFF-8643	
CBL-SFF8643-08M	0.8m	SFF-8643	SFF-8643	
CBL-SFF8643-10M	1.0m	SFF-8643	SFF-8643	
CBL-SFF8643-SATASB-05M	0.5m	SFF-8643	x4 SATA	
CBL-SFF8643-SATASB-06M	0.6m	SFF-8643	x4 SATA	
CBL-SFF8643-SATASB-10M	1.0m	SFF-8643	x4 SATA	
CBL-SFF8643-SAS8482SB-06M	0.6m	SFF-8643	SFF8482	
CBL-RA8643-04M	0.4m	SFF-8643	SFF8643	

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For more information on Avago LSI storage products and where to buy, please visit : www.lsi.com

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